



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

REGION 8, MONTANA OFFICE  
FEDERAL BUILDING, 10 West 15<sup>th</sup> St, Suite 3200  
HELENA, MONTANA 59626

Ref: 8MO

April 16, 2008

Ms. Deborah L.R. Austin, Forest Supervisor  
Attn: Tami Paulsen, Project Team Leader  
Lolo National Forest  
Building 24, Fort Missoula  
Missoula,, MT 59804

Re: CEQ #20080078, EPA Comments on Butte  
Lookout DEIS

Dear Ms Austin:

The Environmental Protection Agency (EPA) Region VIII Montana Office has reviewed the Draft Environmental Impact Statement (DEIS) for the Butte Lookout Project in accordance with our responsibilities under the Section 102(2)(C) of National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act. Section 309 of the Clean Air Act directs EPA to review and comment in writing on the environmental impacts of any major Federal agency action, and publish a summary of our comments in the Federal Register. EPA's comments include a rating of both the environmental impact of the proposed action and the adequacy of the NEPA document (see summary of EPA's DEIS rating system enclosed).

The EPA is supportive of the Butte Lookout Project purpose and need to move the project area toward more desired vegetative conditions that reduce bark beetle infestations and risks of wildfire, rehabilitate degraded watersheds, and provide timber for local and regional economies. We especially appreciate the inclusion of watershed rehabilitation and improvement in hydrologic function and aquatic species passage and reduction of sediment delivery from roads among the project objectives. We are pleased that the DEIS evidences recognition that roads are a large source of management related sediment to streams in the project area, and that road stabilization and road decommissioning is needed to minimize road impacts. The DEIS includes a very good discussion and analysis of road system impacts upon water resources (e.g., high road density, many old jammer roads, close proximity of roads to streams, many road stream crossings, undersized culverts, fish passage issues, lack of cross drainage, eroding fills, etc.).

We fully support the proposed inclusion of activities in the Butte Lookout project to implement road BMPS, improve road drainage, replace or remove culverts, and reduce sediment production and transport from roads, including 5 miles of funded road decommissioning, 0.6 miles of placement of



roads in storage, and 27 miles of road BMP installation in the preferred alternative. Road maintenance and BMP and drainage improvements to forest roads and reductions in road density are critical to protecting aquatic health. We especially support road decommissioning, since reductions in road density, especially road stream crossing density, has been correlated with improved aquatic health in many areas. Lower road densities are also often associated with improved wildlife habitat and security, and reduced risks of human caused fires.

The DEIS correctly states that the South Fork of Lolo Creek is identified on Montana's Clean Water Act Section 303(d) list as water quality impaired, but that a Total Maximum Daily Load (TMDL) is not required because South Fork Lolo Creek impairments are not caused by pollutant delivery. However, we want to note that Lolo Creek, to which the South Fork of Lolo Creek and the West Fork of Butte Creek are tributary (West Fk. Butte Creek is tributary to the South Fork of Lolo Creek), is also listed as water quality impaired, and that sedimentation/siltation are listed among the probable causes of impairment with silvicultural activities and streambank modifications/destabilization listed as probable sources of impairment. A TMDL and Water Quality Plan is being prepared for the Lolo Creek TMDL Planning area by the Montana DEQ. It is important that proposed management activities in the West Fork Butte Creek and South Fork Lolo Creek watershed be consistent with the Lolo Creek TMDL and Water Quality Plan being prepared by the Montana DEQ.

We are pleased that minimal new road construction is proposed with the Butte Lookout Project (i.e., 0.2 miles of new permanent roads and 0.7 miles of short-term road construction proposed with the preferred alternative), and that a large percent of proposed timber harvest is via harvest methods that involve less ground disturbance, and thus, reduced potential to result in erosion and sediment production and delivery (519 acres skyline harvest, 587 acres helicopter harvest, and harvest of seven tractor units during winter). The less disturbing harvest methods along with use of INFISH riparian buffers and appropriate vegetation management BMPs should minimize short-term sediment delivery associated with proposed vegetation management activities. The DEIS states that short-term increases in sediment delivery to area streams would still occur from proposed vegetation management and road related activities, but an overall net decrease in erosion and sediment delivery to area streams would result over the long-term due to the many proposed road improvements included in the project.

We have some concerns, however, that a great deal of the proposed road decommissioning, road stream crossing removals, and road storage work appears to be unfunded (i.e., decommissioning of 7 miles of system roads, 10 miles of historic roads, and 12 miles of jammer roads, and culvert replacements on Cooper and Marshal Creeks and culvert removal on Road #906 and 18 drainage crossing removals or rehabilitations appear to be unfunded). Watershed rehabilitation work that is proposed, but which cannot be implemented on a timely basis in relation to other project activities has less value in mitigating project effects. The majority of the proposed Butte Lookout Project road restoration work appears to be unfunded. Although it appears that overall net water quality improvements would still result from the funded road improvement and decommissioning work included in the preferred alternative (Alternative 5). Table 55 in the DEIS appears to indicate that a 23 percent reduction in sediment delivery or a reduction of 113 tons of sediment would occur over a ten year period in comparison to no action as a result of implementation of Alternative 5. It would be helpful, however, if the FEIS clarified that such an overall net water quality improvement would result from



implementation of the restoration work that can be funded (i.e., clarify that overall net water quality improvements are based on work that is funded and can be carried out).

Our preliminary assessment is that the Butte Lookout project would be consistent with water quality improvement and restoration of support to beneficial uses in Lolo Creek over the long-term, and thus, consistent with the goals of applicable TMDLs and Water Quality Plans, although it is important that adequate road restoration work be funded and implemented. We encourage the Lolo NF to coordinate with MDEQ's TMDL Program staff to assure that MDEQ considers the proposed project to be consistent with applicable TMDLs and Water Quality Plans in development (contact Robert Ray or Mark Kelley of the MDEQ in Helena at 444-5319 or 444-3508, respectively).

We also encourage the Lolo National Forest if at all possible to consider additional road decommissioning within the project area, particularly in drainages with very high road density and water quality problems related to roads. The DEIS states that road densities in the Butte Lookout area would remain high even after proposed road decommissioning. A road density of approximately 4.2 miles per square mile is stated to exist presently in the West Fork Butte 6<sup>th</sup> field HUC, and this road density does not include jammer roads. A small portion of the project area is stated to have a road density of 25 miles per square mile due to numerous old jammer roads. This is highest road density we have ever seen referenced! There appears to be a clear need to carry out additional restoration of jammer roads in the project area.

The EPA's further discussion and more detailed questions, comments, and concerns regarding the analysis, documentation, or potential environmental impacts of the Butte Lookout Project are included in the enclosure with this letter. Based on the procedures EPA uses to evaluate the adequacy of the information and the potential environmental impacts of the proposed action and alternatives in an EIS, the DEIS has been rated as Category EC-2 (Environmental Concerns - Insufficient Information). A copy of EPA's rating criteria is attached. We recommend additional analysis and information to fully assess and mitigate all potential impacts of the management actions.

The EPA appreciates the opportunity to review and comment on the DEIS. If we may provide further explanation of our comments please contact Mr. Steve Potts of my staff in Helena at 406-457-5022 or in Missoula at 406-329-3313 or via e-mail at [potts.stephen@epa.gov](mailto:potts.stephen@epa.gov). Thank you for your consideration.

Sincerely,

/s/ John F. Wardell  
Director  
Montana Office

Enclosures

cc: Larry Svoboda/Julia Johnson, EPA 8EPR-N, Denver  
Robert Ray/Mark Kelley, MDEQ, Helena



# **EPA COMMENTS ON THE BUTTE LOOKOUT PROJECT DRAFT ENVIRONMENTAL IMPACT STATEMENT**

## **Brief Project Overview:**

The Lolo National Forest (LNF), Missoula Ranger District has developed the Butte Lookout Project DEIS to evaluate alternatives and disclose environmental impacts of forest management activities proposed to address forest restoration needs, rehabilitate degraded watersheds, reduce and provide for the social and economic needs of local communities and reduce risks of wildfire. The project area is located about 15 air miles southwest of Missoula, MT on the south side of Lolo Creek. It includes approximately 11,446 acres in the drainages of West Fork Butte Creek and its Cooper and Marshall Creek tributaries. Nearly 90 percent of the project area (10,329 acres) is National Forest System land, with remaining lands owned by Plum Creek Timber Company (807 acres), private individuals (87 acres) and the State of Montana (223 acres). Among the significant issues are: water quality and aquatic habitat restoration, roads, forest health, site productivity, and wildlife habitat.

Three alternatives were analyzed in detail. Alternative 1 is the No Action Alternative that includes no vegetative treatments and road work, and which provides a baseline for comparison to the other alternatives.

Alternative 4 is the proposed action which includes timber harvest (commercial thinning) and underburning treatments on 1,353 acres (256 acres tractor harvest, 627 acres skyline, 470 acres helicopter) with 14,883 CCF of timber production; 109 acres of ecosystem maintenance burning; construction of 0.7 miles of short-term road, 0.5 miles of temporary road, and 1 mile of permanent road. Approximately 5 miles of roads would be decommissioned and 0.6 mile of road placed in storage. Culverts would be replaced on Road #451 at the West Fork Butte Creek crossing, and a culvert would be removed on a tributary, and 2 miles of the road would be narrowed. Best Management Practices (BMPs) would be installed on 40 miles of road. Additional road decommissioning and culvert replacements or removals are proposed as funding allows.

Alternative 5 includes timber harvest (commercial thinning) and underburning treatments on 1,274 acres (168 acres tractor harvest, 519 acres skyline, 587 acres helicopter) with 14,014 CCF of timber production; 166 acres of ecosystem maintenance burning; construction of 0.7 miles of short-term road, 0.5 miles of temporary road, and 0.2 mile of permanent road. Approximately 5 miles of roads would be decommissioned and 0.6 mile of road placed in storage. Culverts would be replaced on Road #451 at the West Fork Butte Creek crossing, and a culvert would be removed on a tributary, and 2 miles of the road would be narrowed. BMPs would be installed on 27 miles of road. Additional road decommissioning and culvert replacements or removals are proposed as funding allows. Alternative 5 is the preferred alternative.



## Comments:

1. We appreciate the inclusion of clear narrative descriptions and maps describing alternatives (Map Appendix), as well as tables describing important features of alternatives in Chapters 2 (Tables 1 through 5), including a matrix comparing alternatives (Table 6), and the listing/discussion of management requirements to eliminate, avoid or reduce environmental impacts (pages 22-29). We particularly appreciate the identification of drainages and treatment units and roads on the alternatives maps that allow easy understanding of locations of treatment units and roads in relation to streams. These maps and tables facilitate improved project understanding, help define issues, and assist in evaluation of alternatives providing a clearer basis of choice among options for the decisionmaker and the public in accordance with the goals of NEPA.

## Water Quality/Hydrology/Fisheries

2. Thank you for including “watershed rehabilitation” and improvement in hydrologic function and aquatic species passage and reduction of sediment delivery from roads among the objectives in the purpose and need statement for the proposed Butte Lookout Project (page 2). We are pleased that the DEIS evidences recognition that roads are a large source of management related sediment to streams in the project area, and that road stabilization and road decommissioning is needed to minimize road impacts (pages 3 and 4). The DEIS includes a good discussion and analysis of road impacts upon water resources (e.g., high road density, close proximity of roads to streams, many road stream crossings, many old jammer roads, undersized culverts, fish passage issues, lack of cross drainage, eroding fills, etc, pages 134 to 138).

We agree that sediment from roads, particularly roads with many stream crossings, undersized culverts, inadequate road drainage, and poorly maintained roads cause adverse water quality impacts. We fully support the proposed inclusion of activities in the Butte Lookout project to reduce road erosion, improve road drainage, replace or remove culverts, and reduce sediment production and transport from roads, including 5 miles of funded road decommissioning (29 miles of additional road decommissioning planned, although unfunded), 0.6 miles of placement of roads in storage, and 27 miles of road BMP installation in the preferred alternative. Road maintenance and BMP and drainage improvements to forest roads are critical to protecting aquatic health.

We especially support road decommissioning, since reductions in road density, especially road stream crossing density, has been correlated with improved aquatic health in many areas, and lower road densities are also often associated with improved wildlife habitat and security. We are particularly pleased that a reduction of 5 road stream crossings and several culvert replacements are proposed with the preferred alternative (page 151), although we are concerned that the great majority of proposed stream crossing removals or replacements appear to be unfunded (18 culvert removals/replacements unfunded, Table 50).



The DEIS states that road densities would remain high even after proposed road decommissioning (page 162). A road density of approximately 4.2 miles per square mile is stated to exist presently in the West Fork Butte 6<sup>th</sup> field HUC, but this road density does not include jammer roads (page 137). A road density of 25 miles per square mile is identified for a small portion of the project area due to many jammer roads (page 163). This is the highest road density we have ever seen referenced in a DEIS! If possible we encourage consideration of additional road decommissioning within the project area, particularly in drainages with very high road density and water quality problems related to roads. Closures of roads near streams with many stream crossings are more likely to have water quality benefits than closure/decommissioning of roads on upper slopes and ridges.

We also note that there is often a relationship between higher road density and increased forest use and increased human caused fire occurrences. Reduction in road density, therefore, may also reduce risks of human caused fires, which could be important in an area with high fuels/fire risk and/or wildland/urban interface issues.

3. The DEIS correctly states that the South Fork of Lolo Creek is identified on Montana's Clean Water Act Section 303(d) list as water quality impaired, and that a Total Maximum Daily Load (TMDL) is not required because impairments are not caused by pollutant delivery. However, we note that Lolo Creek, to which the South Fork of Lolo Creek and the West Fork of Butte Creek are tributary (West Fk. Butte Creek is tributary to the South Fork of Lolo Creek), is also listed as water quality impaired. Lolo Creek is listed as having only partial support of aquatic life uses, with probable causes of impairment identified as physical substrate habitat alterations and sedimentation/siltation, and probable sources listed as agriculture, silviculture activities, and streambank modifications/destabilization, (see MDEQ's water quality impairment listing website, <http://www.deq.state.mt.us/CWAIC/default.aspx> ). A TMDL is required for the Lolo Creek drainage.

It is important that the proposed Butte Lookout project be consistent with the Lolo Creek Watershed TMDL and Water Quality Plan being developed by the Montana Dept. of Environmental Quality to improve water quality and restore full support of beneficial uses to waters in the Lolo Creek. The DEIS states that short-term increases in sediment delivery to area streams would occur from proposed activities, although we are pleased that it is also stated that there would be an overall net decrease in erosion and sediment delivery to area streams over the long-term (page 150). Use of INFISH riparian buffers and appropriate vegetation management BMPs should minimize short-term sediment delivery associated with proposed vegetation management activities. The many proposed road system improvements included in the project should promote water quality improvements over the long-term. Table 55 (page 159) shows an estimated long-term reduction in sediment delivery of 113 tons for the preferred alternative over a ten year period. The DEIS reports shows an estimated sediment reduction of 128 tons/year for the



preferred alternative from road decommissioning (Table 50, page 151), and 13.5 tons/year sediment reduction from proposed road maintenance and improvements Table 49, page 150).

We are concerned, however, that much of the proposed road decommissioning, road stream crossing removals, and road storage work appears to be unfunded (i.e., decommissioning of 7 miles of system roads, 10 miles of historic roads, and 12 miles of jammer roads, and culvert replacements on Cooper and Marshal Creeks and culvert removal on Road #906 appear to be unfunded, page 16; and 18 drainage crossing removals or rehabilitations appear unfunded, page 151). Watershed rehabilitation work that is proposed which cannot be implemented on a timely basis in relation to other project activities due to lack of funding has less value in mitigating project effects. It is important that the overall net decrease in sediment delivery over the long-term be achieved through restoration work that can be implemented. It appears that overall net water quality improvements will still result from the funded road improvement and decommissioning work in Alternative 5, however, it would be helpful to if the FEIS clarified that overall net water quality improvements would occur as a result of the funded restoration work.

Our preliminary assessment is that the Butte Lookout project would be consistent with water quality improvement and restoration of support to beneficial uses in Lolo Creek over the long-term, and thus, consistent with the goals of TMDLs and Water Quality Plans, as long as adequate road restoration work that is proposed is funded and implemented. We encourage the Lolo NF to also coordinate with MDEQ's TMDL Program staff to assure that MDEQ considers the proposed project to be consistent with applicable TMDLs and Water Quality Plans in development (contact Robert Ray or Mark Kelley of the MDEQ in Helena at 444-5319 or 444-3508, respectively).

4. We are pleased that water yield effects of proposed vegetation management activities have been analyzed, and that the Equivalent Clearcut Area (ECA) for the analysis area is well below values that would cause runoff increases that would lead to channel instability problems (page 155).
5. We are also pleased that efforts appear to have been made to minimize construction of new roads with only 0.2 miles of new permanent roads and 0.7 miles of short-term road construction proposed with the preferred alternative (page 18). We realize Lolo NF staff are knowledgeable regarding road planning, design, construction and maintenance measures to minimize water quality effects, however, we are still sharing EPA's general recommendations regarding roads for your information. They are as follows:
  - \* minimize road construction and reduce road density as much as possible to reduce potential adverse effects to watersheds;
  - \* locate roads away from streams and riparian areas as much as possible;



- \* locate roads away from steep slopes or erosive soils;
- \* minimize the number of road stream crossings;
- \* stabilize cut and fill slopes;
- \* provide for adequate road drainage and control of surface erosion with measures such as adequate numbers of waterbars, maintaining crowns on roads, adequate numbers of rolling dips and ditch relief culverts to promote drainage off roads avoid drainage or along roads and avoid interception and routing sediment to streams;
- \* consider road effects on stream structure and seasonal and spawning habitats;
- \* allow for adequate large woody debris recruitment to streams and riparian buffers near streams;
- \* properly size culverts to handle flood events, pass bedload and woody debris, and reduce potential for washout;
- \* replace undersized culverts and adjust culverts which are not properly aligned or which present fish passage problems and/or serve as barriers to fish migration;
- \* use bridges or open bottom culverts that simulate stream grade and substrate and that provide adequate capacity for flood flows, bedload and woody debris where needed to minimize adverse fisheries effects of road stream crossings.

We also encourage conduct of inspections and evaluations to identify conditions on roads and other anthropogenic sediment sources in the watersheds in the project area that may cause or contribute to sediment delivery and stream impairment, and to include activities in the project to correct as many of these conditions and sources as possible.

Blading of unpaved roads in a manner that contributes to road erosion and sediment transport to streams and wetlands should be avoided. It is important that management direction assures that road maintenance (e.g., blading) be focused on reducing road surface erosion and sediment delivery from roads to area streams. Practices of expediently sidecasting graded material over the shoulder and widening shoulders and snow plowing can have adverse effects upon streams, wetlands, and riparian areas that are adjacent to roads. Road use during spring breakup conditions should also be avoided. Snow plowing of roads later in winter for log haul should also be avoided to limit runoff created road ruts during late winter thaws that increase road erosion (i.e., ruts channel road runoff along roads).

Forest Service Region 1 provides training for operators of road graders regarding conduct

of road maintenance in a manner that protects streams and wetlands, (i.e., Gravel Roads Back to the Basics). If there are road maintenance needs on unpaved roads adjacent to streams and wetlands we encourage utilization of such training (contact Donna Sheehy, FS R1 Transportation Management Engineer, at 406-329-3312).

We also note that there are training videos available from the Forest Service San Dimas Technology and Development Center for use by the Forest Service and its contractors (e.g., "Forest Roads and the Environment"-an overview of how maintenance can affect watershed condition and fish habitat; "Reading the Traveled Way"-how road conditions create problems and how to identify effective treatments; "Reading Beyond the Traveled Way"-explains considerations of roads vs. natural landscape functions and how to design maintenance to minimize road impacts; "Smoothing and Reshaping the Traveled Way"-step by step process for smoothing and reshaping a road while maintaining crowns and other road slopes; and "Maintaining the Ditch and Surface Cross Drains"-instructions for constructing and maintaining ditches, culverts and surface cross drains).

6. The DEIS indicates that some project area land types upon which vegetative treatments are proposed are highly erodible and compactable (e.g., land types 30SA, 30SB, 64SB), and land type 43SA is stated to include many seeps and springs (Table 57, page 168). We generally recommend avoidance of ground based timber harvest and road construction in areas with high risk of sediment production or erosion potential and areas highly susceptible to mass failure and wet areas. We also encourage use of harvest/yarding methods that reduce ground disturbance and sediment production and transport risks when harvesting timber on erosive soils or steep slopes to reduce adverse effects to soil and water quality.

We are pleased that the tractor units on the more sensitive land types shown in Table 57 would be harvested in the winter over 24 inches of settled snow or on frozen ground, and that skyline harvesting would be used for the majority of units in the project, and that helicopters would be used to remove commercial timber from units (page 179). We are also pleased that a large percent of proposed timber harvest would occur via harvest methods that involve less ground disturbance (519 acres skyline harvest, 587 acres helicopter harvest) and only 168 acres of tractor harvest, of which units 9A, 17A, 22, 23, 27, 34, and 43 would occur during winter (page 26).

It is important that BMPs and mitigation measures effectively protect soils and avoid sediment production and transport. Measures to protect soils and reduce erosion that during ground based harvests include:

- use of historic skid trails where feasible;
- placing restrictions on skidding with tracked machinery in sensitive areas;
- operating tracked machinery on slash mats;
- ripping or scarifying skid trails and landings to decompact soils;
- adding slash to ripped surfaces to trap sediment;



- rehabilitating skid trails and log landings with erosion control/soil stabilization (water bars, slash placement) and seeding/planting of forbs, grasses or shrubs to reduce soil erosion and hasten recovery.

Some of these measures appear to be proposed (pages 25-27), but we did not see all such measures identified for all summer tractor units. We encourage the Lolo NF to review proposed measures to protect soils and reduce erosion to assure that all of the units with particularly sensitive soils or on landtypes with greater vulnerability or risk of detrimental soil disturbance such as erosion, compaction, and mass wasting include adequate mitigation measures and/or less damaging harvest methods to avoid erosion and other detrimental soil impacts and/or higher levels of sediment production and transport.

7. It is important that adequate field monitoring and analysis is carried out before and after treatments to assure that the Region 1 soil quality thresholds are not exceeded (i.e., <15% detrimental soil disturbance). We are pleased that the Monitoring and Evaluation Plan in Appendix D shows that post-harvest soil monitoring will be carried out. It is appropriate that Appendix D shows that soil monitoring will take place on units 27 and 27A, since these units that are stated to be near the Regional 15 percent threshold, having existing levels of detrimental soil disturbance of 14 and 13 percent, respectively (page 186). We note that unit 37 is also stated to have an existing detrimental soil disturbance levels near the Regional threshold level (i.e., 14 percent detrimental soil disturbance for unit 37). We suggest that unit 37 also be included among the units receiving post-harvest soil monitoring to assure that the Regional threshold of 15 percent detrimental soil disturbance is not exceeded in unit 37.
8. It is also important that adequate woody debris is retained on site to maintain soil productivity. We are pleased that the Lolo NF has a Down Woody Material Guide that contains specific recommendations and prescriptions for coarse woody debris retention by forest habitat type and other environmental features, to maintain long-term soil productivity (pages 25, 181).

#### Wetlands and Riparian Areas

9. EPA considers the protection, improvement, and restoration of wetlands and riparian areas to be a high priority. Wetlands and riparian areas increase landscape and species diversity, support many species of western wildlife, and are critical to the protection of designated water uses. Wetlands in particular have experienced severe cumulative losses nationally. Potential impacts on wetlands include: water quality, habitat for aquatic and terrestrial life, flood storage, ground water recharge and discharge, sources of primary production, and recreation and aesthetics. Executive Order 11990 requires that all Federal Agencies protect wetlands. In addition national wetlands policy has established an interim goal of **No Overall Net Loss of the Nation's remaining wetlands**, and a long-term goal of increasing quantity and quality of the Nation's wetlands resource base.

The EPA evaluates land management activities proposed within the Interior Columbia Basin for consistency with the provisions of the Interagency Memorandum of Understanding between the Forest Service, BLM, EPA, USFWS, and NMFS for Forest Service implementation of the Interior Columbia Basin Strategy on National Forest lands (referred to as the ICB Strategy, <http://www.icbemp.gov/html/icbstrat.pdf> ; and the “A Framework for Incorporating the Aquatic and Riparian Habitat Component of the Interior Columbia Basin Strategy into BLM and Forest Service Plan Revisions,” <http://www.icbemp.gov/html/aqripfrm7804.pdf> ).

Riparian Conservation Areas are an important management element in the ICB Strategy to maintain and restore the health of watersheds, riparian, and aquatic resources to sustain aquatic and terrestrial species and provide water of sufficient quality and quantity to support beneficial uses. It is important that proposed harvest be consistent with the riparian management objectives described in the ICB Strategy, which include:

- \* Achieve physical integrity of aquatic ecosystems;
- \* Provide an amount and distribution of woody debris sufficient to sustain physical and biological complexity;
- \* Provide adequate summer and winter thermal regulation;
- \* Provide appropriate amounts and distributions of source habitats for riparian- or wetland-dependent species; and
- \* Restore or maintain water quality and hydrologic processes.
- \* Restore or maintain naturally functioning riparian vegetation communities.

We are pleased that Inland Native Fish Strategy (INFISH) riparian habitat conservation areas (RHCA) would be used to buffer timber harvest effects from riparian areas (page 23); and that wetlands are included as RHCAs. It is important that timber harvest, road construction, or operation of heavy equipment not be allowed in wetland areas. We recommend that harvest units be reviewed in the field to determine the presence of wetlands and identify wetlands on the Sale Area Map and in the field so that timber contractors will be able to avoid them.

## Monitoring

10. We believe monitoring should be an integral part of land management. The EPA endorses the concept of adaptive management whereby effects of implementation activities are determined through monitoring (i.e., ecological and environmental effects). It is through the iterative process of setting goals and objectives, planning and carrying out projects, monitoring impacts of projects, and feeding back monitoring results to managers so they can make needed adjustments, that adaptive management works. In situations where impacts are uncertain, monitoring programs allow identification of actual impacts, so that adverse impacts may be identified and appropriately mitigated.



The EPA particularly believes that water quality/aquatics monitoring is a necessary and crucial element in identifying and understanding the consequences of one's actions, and for determining effectiveness in BMPs in protecting water quality. The achievement of water quality standards for non-point source activities occurs through the implementation of BMPs. Although BMPs are designed to protect water quality, they need to be monitored to verify their effectiveness. If found ineffective, the BMPs need to be revised, and impacts mitigated. We encourage adequate monitoring budgets for conduct of aquatic monitoring to document BMP effectiveness and long-term water quality improvements associated with road BMP work and road decommissioning.

We are pleased that the Monitoring and Evaluation Plan has been included in the DEIS (Appendix D), and that the Plan states that the intent of such monitoring would be to ensure protection of water quality as intended by the effective implementation of BMPs and RHCA buffers. We generally encourage conduct of some water quality and stream channel condition monitoring to validate that water quality and stream channel conditions (aquatic habitat) were successfully protected through use of adequate BMPs and mitigation measures during project implementation. We believe it is valuable wherever possible to do monitoring to determine actual project effects on water quality and stream channels (aquatic habitat) to verify that aquatic impact predictions were accurate.

We acknowledge, however, that with use of RHCA buffers and with minimal new construction of only 0.2 miles of new permanent roads and 0.7 miles of short-term road construction proposed with the preferred alternative and adequate application of BMPs, water quality impacts are likely to be low, and with implementation of road improvement and rehabilitation work (should it be adequately funded) water quality improvements would likely accrue.

It would be of interest to determine the actual water quality impacts from road restoration work. Perhaps there may be PACFISH/INFISH Biological Opinion (PIBO) monitoring sites in the project area that could be used to help evaluate actual project effects (<http://www.fs.fed.us/biology/fishecology/emp/index.html> ), or perhaps a monitoring station on South Fork Lolo Creek could be funded to allow some determination of the extent of potential water quality improvements.

Examples of potential aquatic monitoring parameters that we often recommend for consideration are: channel cross-sections, bank stability, width/depth ratios, riffle stability index, pools, large woody debris, fine sediment, pebble counts, macroinvertebrates, etc.. The EPA especially recommends biological monitoring, since monitoring of the aquatic biological community integrates the effects of pollutant stressors over time and, thus, provides a more holistic measure of impacts than grab samples. For your information, the EPA encourages use of the following reference materials in designing an aquatic monitoring program:

The Forest Service publication, "Guide to Effective Monitoring of Aquatic and Riparian

Resources,” RMRS-GTR-121, available at,  
[http://www.fs.fed.us/rm/pubs/rmrs\\_gtr121.html](http://www.fs.fed.us/rm/pubs/rmrs_gtr121.html) .

The Forest Service publication, “Testing common stream sampling methods for broad-scale, long-term monitoring,” RMRS-GTR-122, available at,  
[http://www.fs.fed.us/rm/pubs/rmrs\\_gtr122.html](http://www.fs.fed.us/rm/pubs/rmrs_gtr122.html) .

“Aquatic and Riparian Effectiveness Monitoring Plan for the Northwest Forest Plan,”  
Gordon H. Reeves, David B. Hohler, David P. Larsen, David E. Busch, Kim Kratz, Keith Reynolds, Karl F. Stein, Thomas Atzet, Polly Hays, and Michael Tehan, February 2001.  
Available on-line at, [www.reo.gov/monitoring/watershed/aremp-compile.htm](http://www.reo.gov/monitoring/watershed/aremp-compile.htm) .

Monitoring Guidelines to Evaluate Effects of Forestry Activities in the Pacific Northwest and Alaska; Lee H. McDonald, Alan W. Smart and Robert C. Wissmar; May 1991;  
EPA/910/9-91-001;

“Aquatic Habitat Indicators and Their Application to Water Quality Objectives Within the Clean Water Act,” Stephen B. Bauer and Stephen C. Ralph, 1999, EPA-910-R99-014.  
(This publication is available on-line at, <http://www.pocketwater.com/reports/ahi.pdf>)

Western Pilot Study: Field Operations Manual for Wadeable Streams; Environmental Monitoring and Assessment Program Protocols, Edited by David V. Peck, James M. Lazorchak, and Donald J. Klemm, April 2001, available on-line at,  
<http://www.epa.gov/emap/html/pubs/docs/groupdocs/surfwatr/field/ewwsm01.pdf> .

Montana DEQ’s Water Quality Monitoring and Assessment information can be found on the website,  
<http://www.deq.state.mt.us/wqinfo/monitoring/Functions.asp><http://www.deq.state.mt.us/>

Rapid Bioassessment Protocols for use in Streams and Rivers; James A. Plafkin, May 1989, EPA/444/4-89-001.

“Montana Stream Management Guide; for Landowners, Managers, and Stream Users”, Montana Dept. Of Environmental Quality; December 1995.

The Forest Service Region 5 document entitled, “Water Quality Management for Forest System Lands in California: Best Management Practices,” September 2000, is a useful reference for BMP development and BMP effectiveness monitoring. It can be found at the website, <http://fsweb.r5.fs.fed.us/unit/ec/water/water-best-mgmt.pdf> .

“Protocol for Developing Sediment TMDLs” EPA 841-B-99-004, October 1999  
<http://www.epa.gov/owow/tmdl/sediment/pdf/sediment.pdf>



## Air Quality

11. The action alternatives include proposals for prescribed burning including post-harvest underburning (704 acres in Alternative 4; 668 acres in Alternative 5), broadcast prescribed fire (813 acres in Alternative 4 and 834 acres in Alternative 5), and ecosystem burning (109 acres in Alternative 4 and 166 acres in Alternative 5). EPA supports judicious and well planned use of prescribed fire to restore fire to forest ecosystems, manage vegetation and reduce hazardous fuels. Although, as you know smoke from fire contains air pollutants, including tiny particulates (PM<sub>10</sub> and PM<sub>2.5</sub>) which can cause health problems, especially for people suffering from respiratory illnesses such as asthma or emphysema, or heart problems. Particulate concentrations that exceed health standards have been measured downwind from prescribed burns. It is important that the proposed project be consistent with the National Ambient Air Quality Standards (NAAQS) for PM<sub>10</sub> and PM<sub>2.5</sub>, (see at, <http://www.epa.gov/air/criteria.html> ).

In addition, prescribed fire could have impacts on Class II areas and Federally-designated Class I areas, and smoke can reduce visibility and diminish the appreciation of scenic vistas (Wilderness Areas or National Parks). It is important to recognize that the Montana DEQ has returned administration of the clean air visibility program to EPA (see <http://deq.mt.gov/AirQuality/Visibility.asp> ). Please call Ms. Laurel Dygkowski of EPA in Denver for latest information on visibility issues in Montana at 303-312-6144. See also, <http://www.fs.fed.us/pnw/fera/research/smoke/haze/index.shtml> .

We are pleased that Missoula Ranger District Fire Management staff would prepare Prescribed Burn Plans for all broadcast burn units, and that all prescribed burning would be managed in accordance with the Montana/Idaho Airshed Group and Missoula County Health Department to mitigate potential smoke impacts (page 203). We also appreciate the DEIS discussion of the FOFEM fire model comparing estimated wildfire smoke emissions for pre-harvest and post-harvest conditions that show approximate reductions in particulate smoke emissions from wildfire as a result of proposed vegetation treatments (pages 199-203).

Prescribed burning done in accordance with a certified State Smoke Management Plan such as the Montana/Idaho Airshed Group is consistent with *EPA's Interim Air Quality Policy on Wildland and Prescribed Fire*. This is Federal policy which reconciles the competing needs to conduct prescribed fires to manage vegetation and restore fire to fire adapted ecosystems while at the same time maintaining clean air to protect public health. Smoke impacts from prescribed fire carried out during periods of favorable conditions for smoke dispersion are less hazardous than smoke impacts during a wildfire. Careful scheduling of the many burning activities to coincide with proper climatological and meteorological conditions helps avoid air quality problems.

We also encourage use of smoke management techniques during burns to minimize smoke in populated areas as well as visibility effects. Each prescribed burn site will have

unique characteristics, but smoke impacts can be minimized by burning during weather conditions with optimal humidity levels and wind conditions for the types of materials being burned. Smoke impacts can also be minimized by limiting the amount of materials and acreage burned at any one time.

A copy of the *Interim Air Quality Policy* can be found at: <http://www.epa.gov/ttn/oarpg/t1/memoranda/firefnl.pdf> . EPA air quality guidance can be found at [http://www.epa.gov/air/oaq\\_caa.html/](http://www.epa.gov/air/oaq_caa.html/) . It may be of interest to the public to display the website for the Montana/Idaho State Airshed Group, <http://www.smokemu.org> .

It is important to disclose, however, that even though prescribed burns will be scheduled during periods of favorable meteorological conditions for smoke dispersal, the weather can change causing smoke not to disperse as intended. This can be especially problematic for smoldering pile burns when a period of poor ventilation follows a good ventilation day. Smoke dispersal and ventilation climate conditions may be found at this Forest Service website, <http://www.fs.fed.us/pnw/airfire/vcis/> .

We recommend that notices be placed in the local newspaper at the beginning of each burn season, and additional efforts be made to contact residents near burns by telephone to make them aware of burns and potential air quality impacts. This will help sensitive people (e.g., people suffering from respiratory illnesses such as asthma or emphysema, or heart problems) to plan accordingly.

We also encourage efforts be made to educate home owners on the wildland-urban interface who build in fire adapted forest ecosystems regarding the need to use less flammable building materials and to manage fuel and vegetation near their homes (see websites [www.firewise.org](http://www.firewise.org) and [www.firelab.org](http://www.firelab.org) ). General sound fire management practices include:

- \* Reducing the dangerous build-up of dead trees, branches, and vegetative matter on forest floors by using prescribed fire or the selective thinning, pruning, or cutting and removal of trees by mechanical means.

- \* Whenever possible, mechanical thinning can be used as an effective “pretreatment” to prescribed burning, although we also urge consideration of water quality, fishery, and ecological impacts along with air quality impacts when planning management actions (e.g., focusing mechanical treatments near roads to avoid or minimize new road construction). Mechanical treatments may be appropriate where the risk of the escape of prescribed burns is high and where nearby home developments may be threatened.

- \* Implementing fire hazard awareness and mitigation programs for the public. Closure of back country roads during high fire risk periods may reduce potential for human caused fires.



## Vegetation Treatments

12. Thank you for providing the Appendix A descriptions of proposed vegetation treatments that indicate that improvement cutting in mixed conifers and improvement cutting in lodgepole pine are emphasized in the Butte Lookout project. It is further stated that the project would consist of thinning from below and crown thinning to remove smaller excess tree stocking on merchantable-sized trees (7 to 19 inch dbh). We support hazardous fuels reduction and vegetation management, generally recommending thinning from below treatments that retain the larger more vigorous trees, particularly the desirable tree species whose overall composition is declining (e.g., western larch, Ponderosa pine). We generally support retention of large diameter trees (e.g., over 15 inches in diameter) that are long lived and fire resistant, and provide important wildlife habitat, particularly of desired species that are in decline (e.g., western larch, Ponderosa pine). We are pleased that ponderosa pine and western large trees, which are in decline, would be favored for retention (page A-5).

We note that harvest of many large fire resistant trees could potentially increase fire risk by opening up the canopy and promoting more vigorous growth of underbrush and small diameter trees that would increase fuels and fire risk in subsequent years, contrary to the hazardous fuel and fire risk reduction aspects of the purpose and need. We encourage retention of as many large trees as possible.

13. We are pleased that no old growth or potential old growth is proposed for treatment (page 43), although we want to state that we do not oppose thinning from below treatments and/or prescribed burning in old growth habitat for the purpose of reducing fire risk and providing longer-term wildfire protection while protecting and maintaining old growth habitat characteristics.
14. We are also pleased that the Forest Plan Standard for snags and dead material retention (standard #25, Lolo Forest Plan, would be met though implementing the silvicultural prescriptions and contract administration (page 50).

## Wildlife

15. We are pleased that the proposed project (both action alternatives) does not run counter to the objectives, standards and guidelines in the Northern Rockies Lynx Amendment (page 65), and it has been determined that the project “is not likely to adversely affect” the threatened Canada lynx (page 71). We are also pleased that the DEIS states that it has been determined that the project will have “no effect” on either the threatened gray wolf and threatened grizzly bear (pages 72, 73).

If it is determined that the finally selected project alternative could adversely affect any threatened or endangered species (e.g., grizzly bear, lynx, gray wolf, bull trout) the final

EIS should include the Biological Assessment and associated U.S. Fish & Wildlife Service (USFWS) Biological Opinion or formal concurrence for the following reasons:

- (1) NEPA requires public involvement and full disclosure of all issues upon which a decision is to be made;
- (2) The CEQ Regulations for Implementing the Procedural Provisions of NEPA strongly encourage the integration of NEPA requirements with other environmental review and consultation requirements so that all such procedures run concurrently rather than consecutively (40 CFR 1500.2(c) and 1502.25); and
- (3) The Endangered Species Act (ESA) consultation process can result in the identification of reasonable and prudent alternatives to preclude jeopardy, and mandated reasonable and prudent measures to reduce incidental take. These can affect project implementation.

Since the Biological Assessment and EIS must evaluate the potential impacts on listed species, they can jointly assist in analyzing the effectiveness of alternatives and mitigation measures. EPA recommends that the final EIS and Record of Decision not be completed prior to the completion of ESA consultation. If the consultation process is treated as a separate process, the Agencies risk USFWS identification of additional significant impacts, new mitigation measures, or changes to the preferred alternative. If these changes have not been evaluated in the final EIS, a supplement to the EIS would be warranted.

Since a biological assessment is included for the bald eagle (page 74), we want to note that the U.S. Fish & Wildlife Service determined that the bald eagle has recovered, and has been removed in the lower 48 States of the U.S. from the Federal List of Endangered and Threatened Wildlife (effective August 8, 2007).

16. We appreciate the inclusion of Table 29 (pages 75-76) summarizing project effects on sensitive species. We are pleased that the wildlife biologist would be contacted during vegetation treatments if nesting birds are detected and to ensure that high quality, large diameter snags are protected (page 23). While there may be some concerns about potential impacts to sensitive species from proposed vegetation treatments, it appears that impacts are within acceptable thresholds and are unlikely to affect population viability.

#### Noxious Weeds

17. We appreciate the analysis and discussion of noxious weed management for the proposed project (pages 226-229). Weeds are a great threat to biodiversity and can often out-compete native plants and produce a monoculture that has little or no plant species diversity or benefit to wildlife. Activities that disturb soils such as timber harvest and other vegetation treatments and road work tend to increase weed infestations.

We are pleased that weed treatment measures are proposed (pages 27, 28), and that



Appendix D includes monitoring for new weed infestations and compliance with contract requirements for herbicide treatments. We are pleased that weed prevention would be incorporated into road layout and design, since we believe prevention of weed invasions is the cheapest and best way to control weeds. We are also pleased that all off-road logging equipment would be washed prior to entering the project area, and that all disturbed sites such as landings, skid trails, and along roads be seeded with weed-free grass seed. We encourage tracking of weed infestations, control actions, and effectiveness of control actions in a Forest-level weed database. Measures that we often recommend for preventing spread of weeds from source areas to uninfested areas include:

- ▶ Ensure that equipment tracks and tires are cleaned prior to transportation to an uninfested site.
- ▶ Focus control efforts at trail heads and transportation corridors to prevent tracking of seed into uninfested areas.
- ▶ Attempt to control the spread from one watershed to another to reduce water as a transport vector.
- ▶ If a localized infestation exists and control is not a viable option, consider rerouting trails or roads around the infestation to reduce available vectors for spread.
- ▶ Establish an education program for industrial and recreational users and encourage voluntary assistance in both prevention and control activities.
- ▶ Reseed disturbed sites as soon as possible following disturbance.

Weed seeds are transported by wind and water, animal fur, feathers and feces, but primarily by people. The greatest vector for spread of weeds is through motorized vehicles-cars, trucks, ATVs, motorcycles, and even snowmobiles. Weed seeds are often caught on the vehicle undercarriage in mud and released on the Forest. A single vehicle driven several feet through a knapweed site can acquire up to 2,000 seeds, 200 of which may still be attached after 10 miles of driving (Montana Knapweeds: Identification, Biology and Management, MSU Extension Service).

We believe an effective noxious weed control program should consider restrictions on motorized uses, particularly off-road uses, where necessary. Off-road vehicles travel off-trail, disturbing soil, creating weed seedbeds, and dispersing seeds widely. Weed seed dispersal from non-motorized travel is of lesser concern because of fewer places to collect/transport seed, and the dispersal rate and distances along trails are less with non-motorized travel. Restrictions on motorized uses may also be needed after burning and harvest activities until native vegetation is reestablished in the disturbed areas to reduce potential for weed infestation of the disturbed sites.

Prescribed fire has the potential to stimulate weed growth (e.g., Dalmatian toadflax or leafy spurge), and can destroy insects planted for biological weed control. We suggest that these considerations be evaluated for burn units. The effect of burning on the potential stimulation of noxious weeds be evaluated during site-specific project level analysis. Also, if sufficient vegetation is killed (e.g., by prescribed burning) it may



warrant revegetation efforts. Where no native, rapid cover seed source exists, we recommend using a grass mixture that does not include aggressive grasses such as smooth brome, thereby allowing native species to eventually prevail. Mr. Phil Johnson, Botanist, Montana Dept. of Transportation, in Helena at 444-7657, may be able to provide guidance on revegetation with native grasses.

We also note that hay can be a source of noxious weed seed. Hay/straw is used as mulch to slow erosion and encourage seed germination, and used to feed horses in hunting and recreation camps, and as wildlife feed during harsh winters. The Federal Noxious Weed Act of 1974 prohibits the interstate transport of noxious weeds or weed parts, such as seed. Montana has a weed free certification program for hay. We support Forest Service requirements to use certified weed free hay in permits or projects, since cattle that are released on grazing allotments or horses used on public lands can transport undigested weed seed and spread it in their manure. Another option for preventing the introduction of noxious weeds is to require cattle and horses, especially those coming from areas with noxious weeds, to be penned and fed weed free hay for several days prior to being released on public lands.

18. Although we support use of herbicides where needed to control weeds, we encourage prioritization of management techniques that focus on non-chemical treatments first, with reliance on chemicals being the last resort, since weed control chemicals can be toxic and have the potential to be transported to surface or ground water following application. Early recognition and control of new infestations is encouraged to stop the spread of the infestation and avoid wider future use of herbicides, which could correspondingly have more adverse impacts on water quality, fisheries, and biodiversity

It is important that the water contamination concerns of herbicide usage be fully evaluated and mitigated. All efforts should be made to avoid movement or transport of herbicides into surface waters that could adversely affect fisheries or other water uses. The Montana Water Quality Standards include a general narrative standard requiring surface waters to *be free from substances that create concentrations which are toxic or harmful to aquatic life*. Herbicides, pesticides, and other toxicants and chemicals must be used in a safe manner in accordance with Federal label instructions and restrictions that allow protection and maintenance of water quality standards and ecological integrity, and avoid public health and safety problems.

We are pleased that potential effects of use of herbicides on aquatic life has been evaluated, and it has been determined that use of the herbicide Milestone at the prescribed rates would have a very low aquatic risk no result in concentrations of concern for aquatic organisms in the West Fork Butte Creek or South Fork Lolo Creek (page 156). It is not clear if other herbicides are proposed for use in the Butte Lookout project area, but it is important that impacts of all potential herbicides to be used be evaluated to assure that they are used in a manner that avoids adverse effects to aquatic life.



Herbicide applicators should be advised of the potential for runoff of herbicides at toxic concentrations into the streams. The applicators should take precautions during spraying (e.g., applying herbicide only after careful review of weather reports to ensure minimal likelihood of rainfall within 24 hours of spraying; special precautions adjacent to the stream to reduce runoff potential; etc.). It should be unequivocally stated that no herbicide spraying will occur in streams and wetlands or other aquatic areas (seeps, springs, etc.). Herbicide drift into streams and wetlands could adversely affect aquatic life and wetland functions such as food chain support and habitat for wetland species. Streams and wetlands in any area to be sprayed be identified and flagged on the ground to assure that herbicide applicators are aware of the location of wetlands, and thus, can avoid spraying in or near wetlands.

Picloram (Tordon) is a particularly persistent, mobile and toxic herbicide. We recommend that road ditches leading to intermittent and perennial streams be flagged as no-spray zones and not sprayed with picloram based herbicides. We also recommend that picloram not be used at rates greater than 0.25 lbs/acre, and suggest that the Forest Service consider applications of persistent herbicides such as picloram only once per year to reduce potential for accumulation in soil. Potential for persistent herbicides to accumulate in soil in harmful amounts are reduced if sites are treated only once per year (twice being the limit). Trade-offs between effective weed control and effects on soil productivity and leaching concerns may need to be considered. A second treatment application if needed should only occur after 30 days (or according to label directions).

For your information, Dow AgroSciences, the manufacturer of Tordon 22K, has recently developed supplemental labeling for Tordon 22K for areas west of the Mississippi River. They have directions for wick or carpet roller applications. Tordon 22K herbicide can be applied using wick or carpet roller equipment where drift presents a hazard to susceptible crops, surface waters, and other sensitive areas. One part Tordon 22K is mixed with 2 parts water to prepare a 33% solution. The wick method of application is more labor intensive but very effective at targeting particular noxious weeds adjacent to surface waters, wetlands, or protected plants.

Most picloram products, including Tordon 22K, are Restricted Use Pesticides (RUPs) requiring pesticide applicator certification to purchase and apply. It is important that U.S. Forest Service employees be certified throughout the duration of the project. If commercial applicators will be contracted for RUP applications, we recommend checking to make sure their MT commercial RUP license is current. Please contact Montana Dept. of Agriculture at (406) 444-5400 for more information. Also, please note that registration for Access (which has picloram as an active ingredient) is cancelled.

Some suggestions we have to reduce potential water quality and fisheries effects from herbicide spraying are to assure that applicators: 1) are certified and fully trained and equipped with the and appropriate personal protective equipment; 2) apply herbicides according to the label; and 3) use treatment methods that target individual noxious weed

plants in riparian and wetland areas (depending on the targeted weed species, manual control or hand pulling may be one of the best options for weed control within riparian/wetland areas or close to water). The herbicide application technique of hand or manual wipe-on (especially applicable for contact systemic herbicides such as glyphosate) may be an option to control individual plants up to the existing water level adjacent to streams or sensitive aquatic sites.

We also recommend that weed treatments be coordinated with the Forest botanist to assure protection to sensitive plants, and coordinated with fisheries biologists and wildlife biologists to assure that sensitive fisheries and wildlife habitat areas are protected. You may also want to consider use of a more selective herbicide (clopyralid) for use in conifer associated communities to reduce impacts on non-target vegetation. We also note that spotted knapweed, which is a prevalent noxious weed species in western Montana, is non-rhizomatous and should be relatively easy to control with lower rates of the most selective low toxicity herbicides.

For your information, the website for EPA information regarding pesticides and herbicides is <http://www.epa.gov/pesticides/>. The National Pesticide Telecommunication Network (NPTN) website at <http://nptn.orst.edu/tech.htm> which operates under a cooperative agreement with EPA and Oregon State University and has a wealth of information on toxicity, mobility, environmental fate on pesticides that may be helpful (phone number 800-858-7378).



## **U.S. Environmental Protection Agency Rating System for Draft Environmental Impact Statements**

### **Definitions and Follow-Up Action\***

#### **Environmental Impact of the Action**

**LO -- Lack of Objections:** The Environmental Protection Agency (EPA) review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

**EC -- Environmental Concerns:** The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce these impacts.

**EO -- Environmental Objections:** The EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no-action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

**EU -- Environmentally Unsatisfactory:** The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

#### **Adequacy of the Impact Statement**

**Category 1 -- Adequate:** EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis of data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

**Category 2 -- Insufficient Information:** The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses or discussion should be included in the final EIS.

**Category 3 -- Inadequate:** EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the National Environmental Policy Act and or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

\* From EPA Manual 1640 Policy and Procedures for the Review of Federal Actions Impacting the Environment. February, 1987.